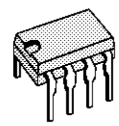
SGS-THOMSON MICROELECTRONICS

TDA8160

INFRARED REMOTE CONTROL RECEIVER

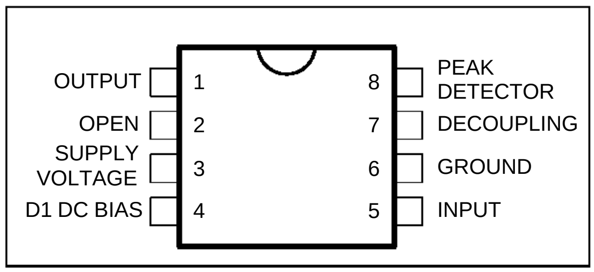
- LOW SUPPLY VOLTAGE (V_S = 5V)
- LOW CURRENT CONSUMPTION (I_S = 6mA)
- INTERNAL 5.5 V SHUNT REGULATOR
- PHOTODIODE DIRECTLY COUPLED WITH THE I.C.
- INPUT STAGE WITH GOOD REJECTION AT LOW FREQUENCY
- LARGE INPUT DYNAMIC RANGE
- FEW EXTERNAL COMPONENTS



DIP8
(Plastic Package)

ORDER CODE : TDA 8160

PIN CONNECTIONS

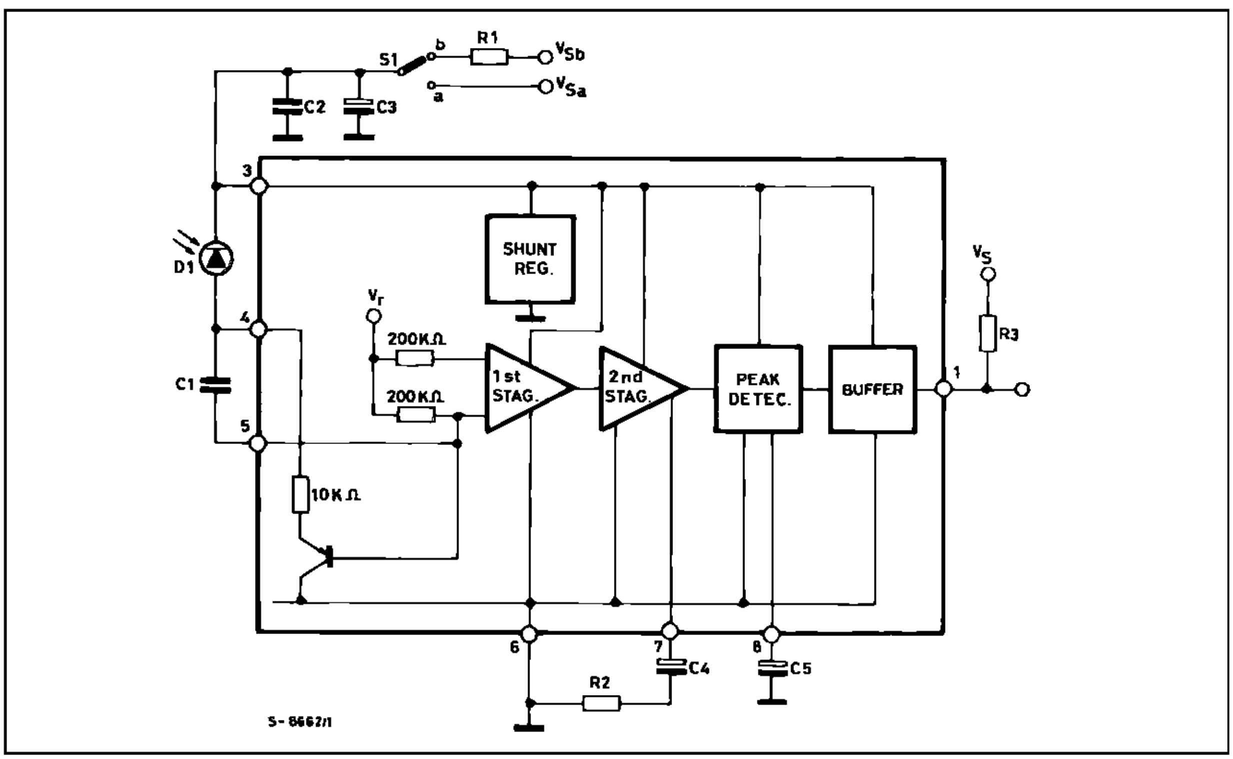


8160-01.EPS

DESCRIPTION

The TDA8160 is a monolithic integrated circuit in-lead minidip plastic package specially designed to amplify the infrared signals in remote controlled TV, Radio or VCR sets. It can be used in flash transmission mode in conjunction with dedicated remote control circuits (for example : M491-494).

BLOCK DIAGRAM



8160-02.EPS

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_s	Supply Voltage	16	V
T_{stg-j}	Storage and Junction Temperature	– 40, +150	°C
P_{tot}	Total Power Dissipation at T_{amb} = 70 °C	400	mW

8160-01.TBL

THERMAL DATA

Symbol	Parameter		Value	Unit
$R_{th\ (j-a)}$	Thermal Resistance Junction-ambient	Max	200	°C/W

8160-02.TBL

ELECTRICAL CHARACTERISTICS

(Refer to the test circuit ; V_S = 5V, f_O = 10kHz, T_{amb} = 25°C, unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_S	Supply Voltage	Applied between Pins 3 and 6	4	5	5.25	V
I_S	Supply Current (Pin 3)			6		mA
V_3	Stabilized Voltage at Pin 3	I_3 = 8mA		5.5		V
G_V 1st	Voltage Gain (1st stage)			28		dB
g_m 2nd	Transconductance (2nd stage)			15		mA/V
V_{IN}	Input Voltage Sensitivity (Pin 5)	For Full Swing at the Output Pin 1 R_{gen} = 600Ω		2		mV_P
I_{IN}	Input Current Sensitivity (Pin 5)	For Full Swing at the Output Pin 1		10		nA_P
R_{IN}	Input Impedance			200		kΩ
L_fR	Low Frequency Rejection at the Input Stage	C1 = 100pF , f = 100HZ			30	dB
N	Noise Signal at Pin 7	C4 Missing			200	mV_{PP}

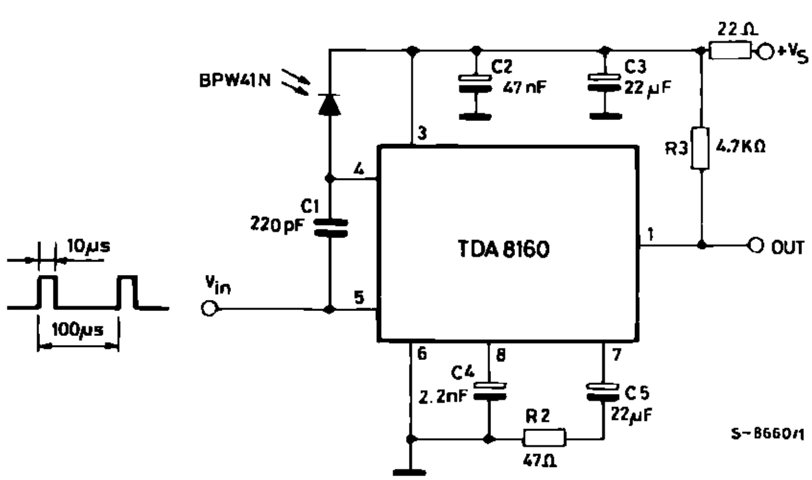
8160-03.TBL

CIRCUIT DESCRIPTION (see the block diagram)

The infrared light received from D1 generates an AC signal that comes in to the device at pin 5. The capacitor C1 and the integrated 10kΩ resistor (pin 4) filter out the low frequency noise.

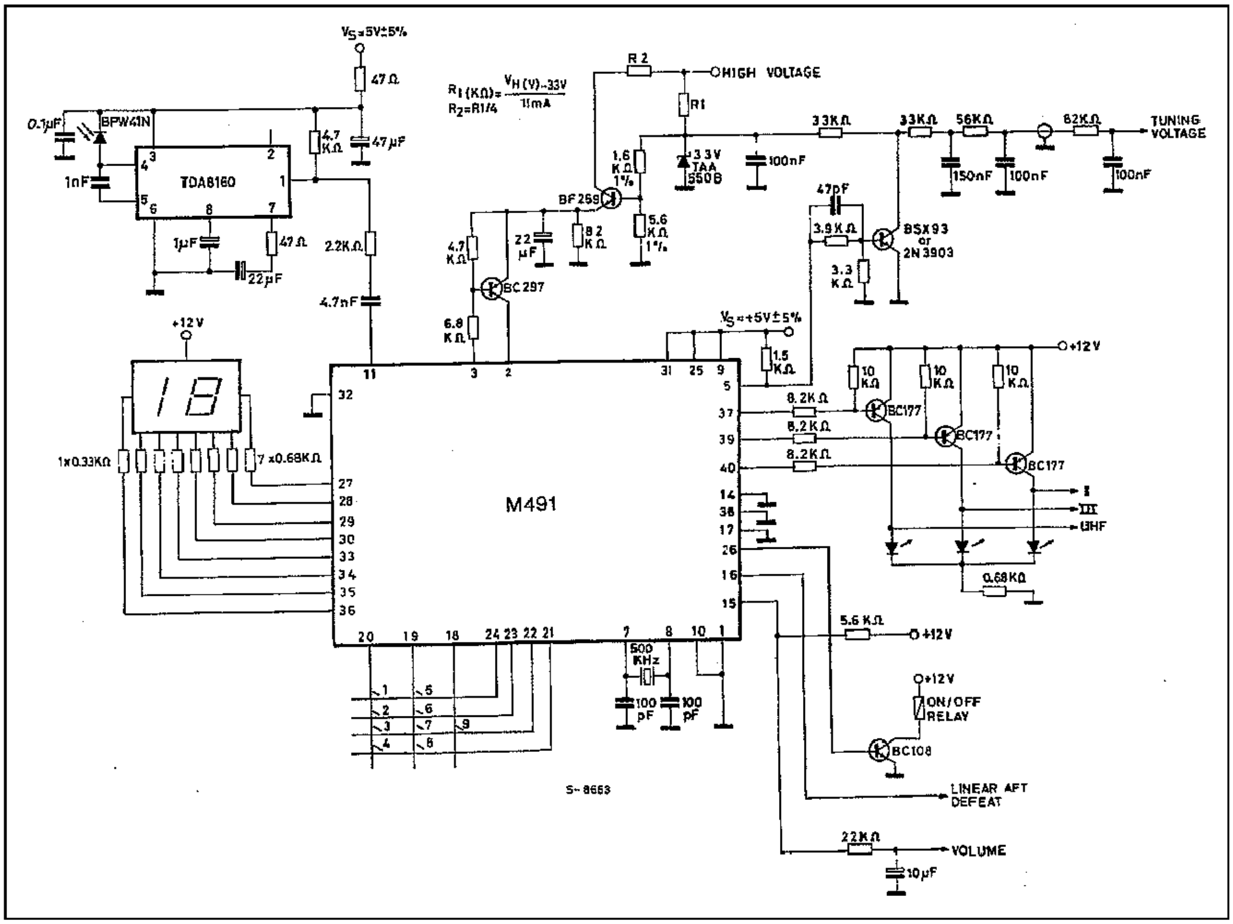
The first stage shows a voltage gain of about 28dB ; the second stage is a voltage to current converter of 50mA/V (R_2 = Zero). A sensitive peak detector detects the amplifier signal ; one open collector output (pin 1) gives out the recovered pulses.

TEST CIRCUIT



8160-03.EPS

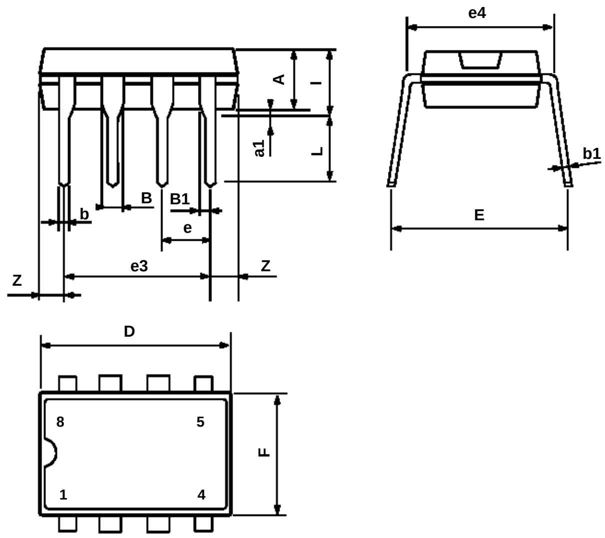
Figure 1 : Recommended Application Circuit for the Drive of the IC M491 by Means of a Flash Mode IR. Transmitter only, in a TV 16 Station Memory Remote Control Subsystem.
The Above Shown IR Receiver Application must be Housed Inside a Metal Can Shield.



8160-04.TIF

PACKAGE MECHANICAL DATA

8 PINS - PLASTIC DIP



PM-DIP8.EPS

Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A		3.32			0.131	
a1	0.51			0.020		
B	1.15		1.65	0.045		0.065
b	0.356		0.55	0.014		0.022
b1	0.204		0.304	0.008		0.012
D			10.92			0.430
E	7.95		9.75	0.313		0.384
e		2.54			0.100	
e3		7.62			0.300	
e4		7.62			0.300	
F			6.6			0260
i			5.08			0.200
L	3.18		3.81	0.125		0.150
Z			1.52			0.060

DIP8.TBL